

Abstract (Per NETL Format) of Paper Offered
For Presentation at DOE/NETL's "Valuing Externalities Workshop",
McLean, VA,
February 20-21, 2003

Title of Paper (Revised 1/3/03): Incorporating Power Plant Externalities
Into Financial Risk Assessment Using the
Principles of Industrial Ecology

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Abstract: The paper details and describes the relevance of a methodology called the E-Equity Quotient and a benchmark called the E-Equity Index developed by Pearl Street Inc. to quantify the "real" value of the environmental performance and productive output of a power plant asset. Here, "equity" refers to a set of principles intended to enlarge, replace, enhance or expand a narrow rigid system of laws. Accordingly, the E-Equity Quotient and Index are intended to represent a broader and more insightful measure of the overall impact on society of an enterprise or firm than simple compliance with environmental laws, a statement of financial profitability, or a declaration of community need. Theoretically, the methodology, on the other hand, allows the plant stakeholders to make strategic decisions about goals and objectives that will improve the sustainability and stack-gas treatment effectiveness of the asset, especially in the face of substantial uncertainty.

Implicit in the EQ methodology is that a coal-fired station's EQ should reflect the negative impact of the operation, but also the positive impact of beneficial activities including degree of abatement of key pollutants, including PM 2.5, PM 2.5 precursors and mercury.

Bolstered by a resulting major improvement in performance and cost-effectiveness in stack gas cleaning, EQ can provide a vehicle for all stakeholders to "get on the same page" in behalf of

beneficial, sustained/expanded utilization of coal. New investments in production and use of this abundant, indigenous fuel necessarily require a long-term planning horizon. On the other hand, competition, industry-deregulation and environmental regulation, as they are currently being pursued, mitigate against long-term planning and force generating companies into unproductive activities, court challenges, restricted investment in productivity and optimization of existing asset and herd mentality, leading towards other options (such as gas-fired combined cycle). More intelligent, at least from an ecological perspective, options for managing the impact of coal – such as the variety of emerging, multi-pollutant removal processes and retrofit of additional pollutant removal in an existing emission control device – can be expected to be more easily justified using an EQ approach, rather than on the sole basis of compliance with EPA rules applied under traditional regulated utility economics.

Government, regulatory bodies and policy-makers, must consider introduction of integrated regulatory frameworks, with long term horizons and certainty, as a replacement of the piecemeal, adversarial regulatory approaches of today and the recent past. These same entities must act as catalysts to support or subsidize EQ activities, including improvement in ambient air quality, that benefit society and communities, long term, and even to bring different industrial sectors together, as in providing suitable incentives to recycle materials from one industry to another.

A climate favorable for pursuit of EQ and industrial ecology initiatives is coming about due to consolidation in ownership of coal-fired assets; a more rational (less irrationally exuberant) investment mentality; a major attempt by the Bush administration to provide more coordination/certainty to environmental regulation of power stations and remove the legal threat of NSR; the emergence of national security as another economic parameter around which to optimize; and the availability/emergence of superior, commercial, environmental pollution control technologies.